**Cutting Curves – Jigsaw, Reciprocating saw, Router. (Don’t forget bandsaw – on separate page)**

**Handheld Jigsaw**

A handheld jigsaw is helpful in certain particular situation: for cutting out a shape in the middle of a workpiece, and for making irregular or curved cuts when a band saw cannot be used.

Jigsaw blades are limited in how tightly they can turn, so it’s usually easiest to drill holes at the corners of shapes to be cut out, as well as the hole where the cut is started.

Jigsaw blades dull quickly; if a jigsaw isn’t cutting well, the blade should be replaced.

Small workpieces should be clamped down well - the jigsaw is prone to shake the workpiece up and down instead of cutting it.

Be sure to clear the area under the cut and be sure there’s a safe path for the cord.

**Reciprocating Saw, aka “Sawzall”**

The reciprocating saw works like a large and powerful jigsaw. Multiple different blades are available, depending on the material being cut

Like the jigsaw, the reciprocating saw can start cuts in the middle of a workpiece. Also like the jigsaw, the reciprocating saw is prone to *shake* workpieces that are not clamped securely.

A reciprocating saw can cut soft metals easily with a metal-cutting blade. It’s possible to cut hardened metals (like cutting off protruding screws), but it wears out the blade very quickly. Hardened metals are better cut with a dremel tool and an abrasive disk.

**Router**

Handheld routers are very useful for cutting along a pattern or smoothing a roughly-cut edge or curve.

***Safe use of a router requires hands-on instruction and experience.*** One important consideration is to minimize the amount the router has to cut at once, and account for the direction of the bit rotation, to avoid cuts that pull the workpiece into the bit.

**Generic Power Tool Safety for Robotics Field Builders:**

1. The tool does not know or care about you or the work. The tool’s only goal is to convert electrical to mechanical energy by spinning something very sharp very fast.
2. Your goal is to arrange the world so the tool’s mechanical energy serves to cut wood fibers, rather than hurl projectiles, yank your hair, grab your arm or carve your flesh.
3. Remember chronic injury – use hearing protection and respiratory dust protection.

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